

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An isolated nucleic acid ~~fragment~~ comprising a ~~sequence of at least about 20 nucleotides from a Brassicaceae or Helianthus full length~~ delta-12 fatty acid desaturase gene coding sequence having at least one mutation in a region of said ~~desaturase gene~~ sequence encoding a His-Xaa-Xaa-Xaa-His amino acid motif, wherein said at least one mutation renders the product of said desaturase gene non-functional and wherein said sequence includes said at least one mutation.

2. (Currently amended) The nucleic acid ~~fragment~~ of claim 1, wherein said at least one mutation comprises a mutation in a region of said ~~desaturase gene~~ sequence encoding a His-Glu-Cys-Gly-His (SEQ ID NO:60) amino acid motif.

3. (Currently amended) The nucleic acid fragment of claim 2, wherein said at least one mutation in said gene sequence introduces a non-conservative amino acid substitution in said motif.

4-9, 11-14, 16-19, 26, 28-30, 35-42 and 44-46 (Cancelled).

Please add the following new claims:

47. (New) The nucleic acid of claim 1, wherein said at least one mutation in said sequence introduces a deletion of one or more amino acids in said motif.

48. (New) The nucleic acid of claim 47, wherein said at least one mutation in said sequence introduces a deletion of one amino acid in said motif.

49. (New) The nucleic acid of claim 1, wherein said at least one mutation in said sequence introduces an insertion of one or more amino acids in said motif.

50. (New) The nucleic acid of claim 49, wherein said at least one mutation in said sequence introduces an insertion of one amino acid in said motif.

51. (New) The nucleic acid of claim 3, wherein said at least one mutation in said motif comprises a substitution of a codon encoding Lys for the codon encoding Glu.

52. (New) The nucleic acid of claim 51, wherein said coding sequence encodes a polypeptide having the amino acid sequence of SEQ ID NO:12.

53. (New) The nucleic acid of claim 52, wherein said sequence is SEQ ID NO:11.

54. (New) The nucleic acid of claim 3, wherein said sequence encodes a microsomal gene product.